

24



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,178	09/11/2003	Siu H. Lam	P16517	7608

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BUCKLEY, MASCHOFF, TALWALKAR LLC
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 NEW CANAAN, CT 06840

EXAMINER

SWERDLOW, DANIEL

ART UNIT PAPER NUMBER

2644

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,178

Applicant(s)

LAM ET AL.

Examiner

Daniel Swerdlow

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 through 8, 13 through 19 and 24 through 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Sauvage et al. (US 2003/0235291A1).
3. Regarding Claim 1, Sauvage discloses a method (Fig. 6; ¶0045-0054) comprising: storing an input signal frame n-1 for later use (i.e., storing a telephony signal data frame in a buffer) (Fig. 6, step 602); detecting DTMF (i.e., a characteristic) on a subsequent frame n (Fig. 6, step 608); determining whether to do DTMF detection on (i.e., analyze) frame n-1 (i.e., the stored frame) (Fig. 6, step 612) based on whether DTMF tone (i.e., the characteristic) is detected in the subsequent frame n (Fig. 6, step 610).
4. Regarding Claim 2, Sauvage further discloses detection of DTMF (i.e., a signaling tone) (¶0001).
5. Regarding Claim 3, Sauvage further discloses detecting DTMF (i.e., a signaling tone) on a subsequent frame n (Fig. 6, step 608).

Art Unit: 2644

6. Regarding Claim 4, Sauvage further discloses use of the Goertzel algorithm (i.e., a fast Fourier transform) for the DTMF detection (§0027).
7. Regarding Claim 5, Sauvage further discloses use of the Goertzel algorithm (i.e., a fast Fourier transform) for the DTMF detection (§0027).
8. Regarding Claim 6, Sauvage discloses a method (Fig. 6; §0045-0054) comprising: receiving a voice input signal divided into frames (i.e., a sequence of telephony signal data frames) (§0032); processing (i.e., analyzing) every third incoming frame (i.e., some but not all of the received telephony signal frames) to perform DTMF detection (i.e., determine whether a signaling tone is present) (§0045).
9. Regarding Claim 7, Sauvage further discloses use of the Goertzel algorithm (i.e., a fast Fourier transform) for the DTMF detection (§0027).
10. Regarding Claim 8, Sauvage further discloses using the Goertzel algorithm with a plurality of difference frequencies (i.e., performing filter bank analysis) (§0013).
11. Claims 13 through 16 are essentially similar to Claim 1 through 3 and 5, respectively, and are rejected on the same grounds.
12. Claims 17 through 19 are essentially similar to Claim 1 through 3 and 5, respectively, and are rejected on the same grounds.
13. Claims 24 through 27 are essentially similar to Claim 6 through 8, respectively, and are rejected on the same grounds.
14. Claims 28 through 32 are essentially similar to Claim 1 through 6, respectively, and are rejected on the same grounds. Sauvage explicitly discloses an embodiment that is an article of manufacture comprising a program storage medium having computer readable program code

Art Unit: 2644

means embodied therein for performing a method of detecting a dual tone multi-frequency (DTMF) tone in an input signal (§0017).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 9 through 12 and 20 through 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauvage in view of Cannon et al (US Patent 6,671,252).

17. Regarding Claim 9, Sauvage discloses processing (i.e., selecting) every third incoming frame (i.e., frames from a sequence of frames of telephony signal data) to perform DTMF detection (i.e., analyzing the selecting frames to determine whether a signaling tone is present) (§0045). Therefore, Sauvage anticipates all elements of Claim 9 except analyzing subframes to determine the presence of signaling tone. Cannon discloses secondly processing data frames with a shorter frame length (i.e., subframes) to detect a particular frequency (i.e., presence of signaling tone) (column 4, lines 56-58). Cannon further discloses that such processing allows accurate and efficient measurement of tone burst duration and increases the robustness of tone detectors (column 4, lines 31-43). As such, it would have been obvious to one skilled in the art at the time of the invention to apply subframe processing as taught by Cannon to the detector taught by Sauvage for the purpose of realizing the aforesaid advantages.

Art Unit: 2644

18. Regarding Claim 10, Sauvage further discloses processing (i.e., selecting) every third incoming frame (i.e., every n th frame where n is greater than 1) (§0045).
19. Regarding Claim 11, Sauvage further discloses doing DTMF detection on frames $n-1$ (Fig. 6, step 612) if DTMF is detected in frames n (Fig. 6, steps 608, 610) (i.e., selecting each frame immediately before an analyzed frame determined to include signaling tone).
20. Regarding Claim 12, Sauvage further discloses use of the Goertzel algorithm (i.e., a fast Fourier transform) for the DTMF detection (§0027).
21. Claims 20 through 23 are essentially similar to Claims 9 through 12, respectively, and are rejected on the same grounds.

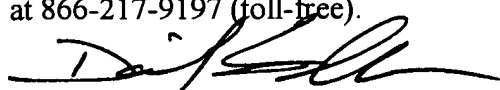
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 571-272-7531. The examiner can normally be reached on Monday through Friday between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H. Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2644

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Swerdlow
Examiner
Art Unit 2644

ds
23 March 2005